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09/773,243	01/31/2001	Thomas Henry Tichy	CTS-1999	6147

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EXAMINER	
SHAPIRO, LEONID	

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Please find below and/or attached an Office communication concerning this application or proceeding.

TS

Office Action Summary	Application No. 09/773,243	Applicant(s) TICHY ET AL.	
	Examiner Leonid Shapiro	Art Unit 2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *10 October 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-12,15,16,18 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-12,15,16,18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Drawings

1. The drawings were received and approved on 10-10-03. This drawing is Figure 2.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-6, 9, are rejected under 35 U.S.C. 103(a) as being unpatentable over Seffernick et al. (US Patent No. 5,966,117) in view of Saarmaa et al. (Patent Application No. 2001/0005108 A1) and further in view of Woodart et al. (US Patent No. 6,259,188 B1).

As to claim 1, Seffernick et al. teaches an apparatus for a cursor control device comprising: a cursor control mechanism (See Fig. 3, items 12, 30, in description see Col. 3, Lines 24-34); the substrate coupled to the cursor control mechanism (See Fig. 1, item 14, in description See Col. 4, Lines 41-46), the cursor control mechanism providing a Z-axis output signal in response to being actuated by an operator and control circuit sensing the z-axis output signal (See Fig. 4, item 161, in description See Col. 5, Lines 49-55).

Seffernick et al. does not teach a piezo-electric material mounted on a semi-rigid substrate.

Saarmaa et al. teaches a tactile feedback (See in Description paragraph 0055) by attaching a piezo-electric material on substrate (See Fig. 3d, items 10, 201, in description See paragraph 0049).

It would have been obvious to one of ordinary skill in the art at the time of the invention to attach piezo-electric material as shown by Saarmaa et al. to the semi-rigid substrate in Seffernick et al. apparatus in order to provide tactile feedback (See in Description of Saarmaa et al. reference paragraph 0055).

Seffernick et al. and Saarmaa et al. do not show a control circuit electrically interconnected to the piezo-electric material for providing a signal to cause the piezo-electric material to vibrate and a control signal to cause the piezo-electric material to vibrate in response to the z-axis output signal.

Woodart et al. teaches a control circuit electrically interconnected to the piezo-electric material for providing a signal to cause the piezo-electric material to vibrate (See Fig. 1C, items 10, 28, in description see col. 4, lines 42-50) and a control signal to cause the piezo-electric material to vibrate in response to the z-axis output signal (See Fig. 1C, items 10, 28, in description see col. 4, lines 42-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a control circuit as shown by Woodart et al. in Seffernick et al. and Saarmaa et al. apparatus in order to provide an alert apparatus (See Col.1, Lines 46-47 in Woodart et al. reference).

Woodart et al., Seffernick et al. and Saarmaa et al. do not show the piezo-electric material adapted to vibrate for a predetermined period of time.

Since tactile feedback on Z-axis is equivalent to mouse click and could not continue indefinite time as most computer events (for example, until next mouse click), it would have been obvious to one of ordinary skill in the art at the time of the invention that the piezo-electric

material adapted to vibrate for a predetermined period of time in the Woodart et al., Seffernick et al. and Saarmaa et al. apparatus.

As to claims 3-6, Seffernick et al. teaches the substrate from of epoxy glass, Fr4, or molded polycarbonate material (See in Description Col. 4, Lines 60-64).

Seffernick et al. does not show the substrate made from semi-rigid material as a thin layer of metal, an alumina, an additional piezo-electric wafer, a ceramic material.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use different materials in Seffernick et al., Saarmaa et al. and Woodart et al. apparatus in order to provide tactile feedback (See in Description of Saarmaa et al. reference paragraph 0055). Such a modification in material usage would have been considered a mere design consideration which fails to patentably distinguish over the prior art of the record.

As to claims 9, Saarmaa et al. teaches the piezo-electric material comprises a plurality of layers of piezo-electric material (See in Description paragraph 0052).

3. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seffernick et al., Saarmaa et al. and Woodart et al. as aforementioned in claims 1, 4 and 6 in view of Barber et al. (US Patent No. 5,973,6700).

As to claims 7-8, Woodart et al. teaches the control circuit providing the control signal to cause the piezo-electric material to vibrate in response to the indicating signal (See Fig. 1C, items 10, 28, in description see col. 4, lines 42-50).

Seffernick et al., Saarmaa et al. and Woodart et al. do not show an indicating circuit for providing an indicating signal when the cursor is placed over the active area on a display.

Barber teaches an indicating circuit for providing an indicating signal when the cursor is placed over the active area on a display (See Fig. 1, items 32,34, in description See from Col. 3, Line 66 to Col. 4, Line 29).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use an indicating circuit for providing an indicating signal when the cursor is placed over the active area on a display as shown by Barber et al. in Seffernick et al., Saarmaa et al. and Woodart et al. apparatus in order to provide tactile feedback (See in Description of Saarmaa et al. reference paragraph 0055).

Barber et al. teaches the software determines a condition requiring tactile feedback and provides the electric signal to the piezo-electric material in the cursor control device (See Fig. 1, items 32,34, in description See from Col. 3, Line 66 to Col. 4, Line 29).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the software determines a condition requiring tactile feedback and provides the electric signal to the piezo-electric material in the cursor control device as shown by Barber et al. in Seffernick et al., Saarmaa et al. and Woodart et al. apparatus in order to provide tactile feedback (See in Description of Saarmaa et al. reference paragraph 0055).

4. Claims 10, 11-12, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barber et al. in view of Sefferenick et al. and further in view of Saarmaa et al. and further in view of Woodart et al.

As to claim 10, Barber et al teaches a computer input system comprising: a computer (See Fig. 1, item 16); a cursor control device electrically controlled to the computer (See fig. 1,

item 14); software for determining a cursor position based upon user actuation of the cursor control device display (See Fig. 1, items 32,34, in description See from Col. 3, Line 66 to Col. 4, Line 29).

Barber does not show the cursor control device further comprising: an x, y, z axis sensor system and software determining a condition requiring tactile feedback.

Seffernick et al. teaches an x, y, z axis sensor system (See Fig. 3, items 12, 30, in description see Col. 3, Lines 24-34); the substrate coupled to the cursor control mechanism (See Fig. 1, item 14, in description See Col. 4, Lines 41-46).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use an x, y, z axis system as shown by Seffernick et al. in Barber et al. apparatus and develop software determining a condition requiring tactile feedback in order to provide a pointing stick for controlling the positioning, movement and operation of a cursor on the display screen (See Col. 3, Lines 21-23 in Seffernick et al. reference).

Seffernick et al. and Baker et al. do not show a piezo-electric material mounted on a semi-rigid substrate.

Saarmaa et al. teaches a tactile feedback (See in Description paragraph 0055) by attaching a piezo-electric material on substrate (See Fig. 3d, items 10, 201, in description See paragraph 0049).

It would have been obvious to one of ordinary skill in the art at the time of the invention to attach piezo-electric material as shown by Saarmaa et al. to the semi-rigid substrate in Seffernick et al. and Barber et al. apparatus in order to provide tactile feedback (See in Description of Saarmaa et al. reference paragraph 0055).

Baker et al, Seffernick et al. and Saarmaa et al. do not show a control circuit electrically interconnected to the piezo-electric material for providing a signal to cause the piezo-electric material to vibrate, an electric circuit for generating a predefined signal.

Woodart et al. teaches a control circuit electrically interconnected to the piezo-electric material for providing a signal to cause the piezo-electric material to vibrate, an electric circuit for generating a predefined signal (See Fig. 1C, items 10, 28, in description see col. 4, lines 42-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a control circuit as shown by Woodart et al. in Baker et al. ,Seffernick et al. and Saarmaa et al. apparatus upon activation by a predefined electrical signal in order to provide an alert apparatus (See Col.1, Lines 46-47 in Woodart et al. reference).

Woodart et al., Seffernick et al., Baker et al. and Saarmaa et al. do not show software further adapted to cause the piezo-electric material to vibrate for a predetermined period of time.

Since tactile feedback on Z-axis is equivalent to mouse click and could not continue indefinite time as most computer events (for example, until next mouse click), it would have been obvious to one of ordinary skill in the art at the time of the invention develop software further adapted to cause the piezo-electric material to vibrate for a predetermined period of time in Woodart et al., Seffernick et al., Baker et al. and Saarmaa et al. apparatus.

As to claims 11, Woodate et al. teaches the predefined electrical signal is an AC signal (See Fig. 1A, item 32, in description See col. 3, Lines 56-59).

As to claim 12, Woodard et al. teaches an AC signal is at least 20 volts peak to peak (See Fig. 1A, item 32, in description See col. 4, Lines 5-18) with a frequency of at least 300 Hz (See Fig. 1A, item 32, in description See col. 3, Lines 52-57).

As to claims 15, Seffernick et al. teaches the cursor control device is a pointing stick (See Fig. 5, item 10, in description See Col. 2, Lines 14-16).

As to claims 16, Saarmaa et al. teaches a mouse as the cursor control device (See Fig. 6I, in description See paragraph 0055).

5. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seffernick et al. in view of Saarmaa et al., Woodart et al. and Krukovsky (US Patent No. 6,323,842 B1).

Seffernick et al. teaches an apparatus for a cursor control device comprising: a cursor control device for providing a desired cursor movement (See Fig. 3, items 12, 30, in description see Col. 3, Lines 24-34) and See Fig. 1, item 14, in description See Col. 4, Lines 41-46).

Seffernick et al. does not teach a piezo-electric assembly operable as a source of vibration.

Saarmaa et al. teaches a tactile feedback (See in Description paragraph 0055) by attaching a piezo-electric material on substrate (See Fig. 3d, items 10, 201, in description See paragraph 0049).

It would have been obvious to one of ordinary skill in the art at the time of the invention to attach piezo-electric material as shown by Saarmaa et al. to the semi-rigid substrate in Seffernick et al. apparatus and method in order to provide tactile feedback (See in Description of Saarmaa et al. reference paragraph 0055).

Seffernick et al. and Saarmaa et al. do not show a control device for sensing a predefined condition and providing an electrical signal to activate the piezo-electric assembly; and wherein the piezo-electric assembly is mechanically coupled to the cursor control device to deliver the vibration to the user.

Woodart et al. teaches a control circuit electrically interconnected to the piezo-electric material for providing a signal to cause the piezo-electric material to vibrate (See Fig. 1C, items 10, 28, in description see col. 4, lines 42-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a control circuit as shown by Woodart et al. in Seffernick et al. and Saarmaa et al. apparatus and method in order to provide tactile feedback (See Col.1, Lines 46-47 in Woodart et al. reference).

Woodart et al., Seffernick et al. and Saarmaa et al. do not show an input suppression module coupled to the cursor control device, the input suppression module adapted to deactivate the cursor control device in response to detecting the electrical signal generated by a control device.

Krukovsky teaches the disabling device disabling only the part of electrical circuitry which generated X-Y positioning signals (See Fig. 12, item 2, in description See from Col. 2, Line 63 to Col. 3, Line 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a disabling device as shown by Krukovsky in Woodart et al., Seffernick et al. and Saarmaa et al. apparatus and method to use it as suppression module coupled to the cursor control device, the input suppression module adapted to deactivate the cursor control device in response to

detecting the electrical signal generated by a control device in order to provide a disabling device for the computer mouse, which can prevent unintended and unpredictable input signals (See Col.1, Lines 55-60 in Krukovsky reference).

Woodart et al., Seffernick et al., Krukovsky and Saarmaa et al. do not show the input suppression module adapted to deactivate the cursor control device for a pre-determined period of time.

Since tactile feedback on Z-axis is equivalent to mouse click and could not continue indefinite time as most computer events (for example, until next mouse click), it would have been obvious to one of ordinary skill in the art at the time of the invention that the input suppression module adapted to deactivate the cursor control device for a pre-determined period of time in Woodart et al., Seffernick et al., Krukovsky and Saarmaa et al. apparatus and method.

Response to Amendment

6. Applicant's arguments filed on 10-10-03 with respect to claims 17-18 have been considered but are moot in view of the new ground(s) of rejection.

Response to Arguments

7. Applicant's arguments filed 10-10-03 have been fully considered but they are not persuasive.

On page13, 1st to 3rd paragraphs Applicant's stated that none of references has new introduced limitation: "adapted to vibrate for a pre-determined period of time. However, Since tactile feedback on Z-axis is equivalent to mouse click and could not continue indefinite time as

most computer events (for example, until next mouse click), it would have been obvious to one of ordinary skill in the art at the time of the invention that the input suppression module adapted to deactivate the cursor control device for a pre-determined period of time in Woodart et al., Seffernick et al., Krukovsky and Saarmaa et al. apparatus and method.

On page13-14, last paragraphs Applicant's stated, that the modification is not obvious unless there is suggestion in a prior art. However, the final rejection shows suggestions in each prior art (See Final rejection).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Telephone inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

ls

VIJAY SHANKAR
PRIMARY EXAMINER